

## ABSTRACT

A transformerless photovoltaic system that may benefit from inverter topologies more suitable for ripple current cancellation techniques is provided. In one exemplary embodiment, the system may combine basic modules of straightforward inverter topologies to meet requirements for higher power applications and may comprise a bipolar photovoltaic array, and a full-bridge inverter electrically coupled to the bipolar photovoltaic array. The full bridge inverter may comprise first and second inverter legs that may be arranged to energize two phases of a grid electrically coupled to the photovoltaic system. In one exemplary embodiment, switching signals applied to switching devices in each of the first and second inverter legs may be adjusted relative to one other to reduce ripple current therein, thereby reducing the size of components used by the system.